



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/698,851

10/31/2003

Surya Varanasi

112-0135US

9321

29855

7590

07/03/2008

WONG, CABELLO, LUTSCH, RUTHERFORD & BRUCCULERI,
L.L.P.

20333 SH 249

SUITE 600

HOUSTON, TX 77070

EXAMINER

FAROUL, FARAH

ART UNIT

PAPER NUMBER

2616

MAIL DATE

DELIVERY MODE

07/03/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/698,851	Applicant(s) VARANASI ET AL.	
	Examiner FARAH FAROUL	Art Unit 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15, 17-34, 36-53, 55-72 and 74-95 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15, 17-34, 36-53, 55-72 and 74-95 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>05/29/2008</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The following Office Action is based on the after-final amendment filed on May 29, 2008 having claims 1-15, 17-34, 36-53, 55-72, and 74-95.

Response to Arguments

2. Applicant's arguments, see pages 20-26, filed May 29, 2008, with respect to the rejection(s) of claim(s) 1-15, 17-34, 36-53, 55-72, and 74-95 under 35 USC 102(b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of newly found prior art. The claims objections, drawing objections and statutory subject matter rejection have been withdrawn.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-15, 21-34, 40-53, 59-72, 78-87 and 92-95 are rejected under 35 U.S.C. 103(a) as being unpatentable over Valdevit et al. (US 2002/0156918 A1) in view of Soloway et al. (US 6,532,212 B1).

For claims 1, 21, 40, 59, 78, and 92, Valdevit discloses a host (figure 2, source or destination), a physical storage unit (figure 2, element 136)

A first switch (fig 2, 210-3,2) and a second switch (fig 2, 210-3,4) communicatively coupled to form a switch fabric (fig 2, 230 and 240) and the first and the second switch further communicatively coupled to the host and physical storage unit (see connections in figure 2)

At least the first switch (fig 4) including a processor (424 or 428) and memory (444) to balance the a flow of frames exiting the switch

The first switch selects an exit port of the switch from a set of possible exit ports through which a frame from the flow of frames will exit to reduce frame traffic congestion

along potential routes that include the set of possible exit ports including at least some of the exit ports (paragraph 63 and Fig 6, blocks 602, 604-608 and 610)

For claims 1, 21, 40, 59, 78, and 92, Valdevit discloses the entire claimed invention except for the switch fabric comprises at least two trunk groups.

Soloway, from the same or similar field of endeavor, teaches a Fibre Channel fabric comprising Fibre Channel switches 300 and 310 (See Fig 4) and including at least two trunk groups (Fig 4, element 330, 340, 350 and 360) for routing flow traffic (column 2, lines 10-25 and column 6, lines 10-27).

Thus, it would have been obvious to one of ordinary skill in the art to combine the trunking method of Soloway with the communication network of Valdevit at the time of the invention. The motivation to combine the trunking method of Soloway with the communication network of Valdevit is to reduce congestion in the system.

For claim 2, Valdevit discloses at least all of the exit ports of at least two trunk groups (Fig 8A, elements 812 and 818)

For claims 3-4, 22-23, 41-42, 60-61 and 79-80, Valdevit discloses at least one of the trunk groups comprises four or eight exit ports (paragraph 51 wherein the trunk groups may comprise four or more exit ports and Figure 8A, elements 812 and 818)

For claims 5, 24, 43, 62, 81 and 93, Valdevit discloses the process comprises a pseudo-random process (paragraph 64, lines 1-5).

For claims 6, 25, 44, 63, 82 and 94, Valdevit discloses applying the pseudo-random process comprises applying a hash function (paragraph 64, lines 1-5).

For claims 7, 26, 45, 64 and 83, Valdevit discloses the hash function is applied to a set of parameters with the frames exiting the switch in order to select an exit port from the set of possible exit ports (paragraph 63).

For claims 8, 12, 27, 31, 46, 50, 65, 69, 84, 86 and 95, Soloway discloses a weight or multiple weights is/are respectively assigned to at least some respective ones of the exit ports, employing the weights to select an exit port over alternative exit ports to achieve a function reflected by said weights (column 5, lines 35-40 and 49-58 wherein a cost is assigned to the exit ports and routing is performed based on the costs).

For claims 9-10, 13-14, 28-29, 33-34, 47-48, 51-52, 66-67, 70-71, Valdevit discloses obtaining a higher or lower value objective function (paragraph 64, lines 11-29 wherein the objective function maybe a lower or upper value)

For claims 11, 15, 30, 32, 49, 53, 68, 72, 85 and 87, Soloway discloses multiple weights at least in part reflect consumed bandwidth for particular routes (column 5, lines 35-40 and 49-58 wherein the cost assigned reflects bandwidth consumption for the routes).

4. Claims 17-20, 36-39, 55-58, 74-77 and 88-91 are rejected under 35 U.S.C. 103(a) as being unpatentable over Valdevit et al. (US 2002/0156918 A1) in view of Soloway et al. (US 6,532,212 B1) as applied to claim 1-15, 21-34, 40-53, 59-72, 78-87 and 92-95 above, and further in view of Srikanth et al. (US 6,430,621 B1).

For claim 17, 36, 55, 74, and 88, Valdevit and Soloway disclose the entire claimed invention except for at least one of the set of possible exit ports is selected based at least in part on a source tag or destination tag added to the frame after the frame enters the switch.

Srikanth, from the same or similar field of endeavor, teaches selecting exit ports for packet forwarding based on a source or destination tag (column 5, lines 3-29).

Thus, it would have been obvious to one of ordinary skill in the art to combine the tagging method of Srikanth with the modified system of Valdevit and Soloway at the time of the invention. The motivation to combine the tagging method of Srikanth with the modified system of Valdevit and Soloway is to identify packets destined for a selected port.

For claim 18, 37, 56, 75 and 89, Valdevit discloses the source tag or destination tag is stripped off the frame before the frame exits the switch (column 5, lines 3-29 wherein the tag is stripped off before forwarding the packet to the selected port).

For claim 19, 38, 57, 76, and 90, Valdevit discloses at least one of the possible exit ports is selected based at least in part on a source tag and a destination tag added to each of the frames after the frames enter the switch (column 5, lines 3-29).

For claim 20, 39, 58, 77 and 91, Valdevit discloses the source tag or destination tag is stripped off each of the frames before each of the frame exits the switch (column 5, lines 3-29 wherein the tag is stripped off before forwarding the packet to the selected port).

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to FARAH FAROUL whose telephone number is (571)270-1421. The examiner can normally be reached on Monday - Friday 8:00 AM - 5 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Firmin Backer can be reached on 571-272-6703. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Farah Faroul/
Examiner, Art Unit 2616

/FIRMIN BACKER/
Supervisory Patent Examiner, Art Unit 2616